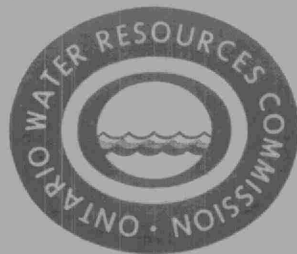


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THE
ONTARIO WATER RESOURCES
COMMISSION

WATER POLLUTION SURVEY

of the

COMMUNITY OF MINDEN

COUNTY OF HALIBURTON

1971

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THE
ONTARIO WATER RESOURCES
COMMISSION
REPORT ON A
WATER POLLUTION SURVEY
OF THE
COMMUNITY OF MINDEN
(TOWNSHIP OF ANSON, HINDON AND MINDEN)
IN THE
COUNTY OF HALIBURTON
DIVISION OF SANITARY ENGINEERING

REPORT ON A
WATER POLLUTION SURVEY
OF THE
COMMUNITY OF MINDEN

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Map of the Community of Minden
Interpretation of Analyses
Laboratory Results

WATER POLLUTION SURVEY

OF THE

COMMUNITY OF MINDEN

INTRODUCTION:

This is a report on a water pollution survey of the Community of Minden. Sampling was performed in September of 1969 and again in May and November of 1970. Surveys of this nature are performed by the Ontario Water Resources Commission for the purpose of locating existing and potential sources of water pollution. Recommendations are then made regarding the abatement of these conditions.

COMMUNITY OF MINDEN:

The Community of Minden is located along Highway #35, in the Township of Minden, approximately 45 miles north of Lindsay. Its population is approximately 800.

The Gull River flows in a southwesterly direction through the community and discharges into Gullfoot Lake. The area supports substantial recreational activities during the summer.

WATER USES:

MUNICIPAL:

The community water works in Minden is comprised of two wells, a hypochlorinator and a distribution system. In 1962, the

first well was drilled to a depth of 156 feet. In 1968, a second well was drilled to a depth of 160 feet. The hypochlorinator was installed in the summer of 1970. In 1970, the average and maximum day flows were .038 mg and .083 mg respectively.

INDUSTRIAL:

The local laundromat's water requirements are supplied by the municipal water works.

RECREATIONAL:

The Gull River is used to some extent for such recreational purposes as fishing, boating and swimming.

SEWERAGE SYSTEMS:

SURFACE DRAINAGE:

Surface run-off is conveyed to the river in Minden mainly by three storm sewers, three drainage ditches and a local creek. A map of the locations of these drainage systems is appended to this report.

SANITARY WASTE DISPOSAL:

The Community of Minden is presently serviced by private sewage disposal systems comprised mainly of septic tank systems. Some difficulty has been experienced with limited sized lots and inadequate soil conditions. A number of business establishments have their septic tanks pumped out on a regular basis due to inadequate waste disposal systems.

SAMPLING PROCEDURE:

Bacteriological and chemical samples were obtained from pertinent locations on the Gull River, local creek and municipal outfalls.

SAMPLE RESULTS:

The laboratory sample results indicate the presence of sanitary wastes in the two Main Street storm sewers and in the drainage ditches that run along Peck Street and Germain Street.

Generally, the other drainage outfalls were within the OWRC objectives for surface waters. The Gull River also tested satisfactorily, showing no increase in bacterial levels as it flowed through the community.

PROPOSED SEWAGE WORKS:

A Provincial sewage works for the Community of Minden is now in the design stage. Proposed rates for this sewage works programme are expected to be submitted to the municipality during 1971. These works will consist of sanitary sewers, two sewage pumping stations and forcemains, two river crossings and treatment facilities. The collector sewers presently under consideration, cover the major built-up area of the Community and thus the areas where contamination has been noted in the survey.

SUMMARY:

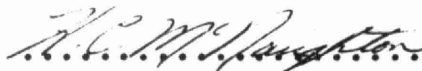
A water pollution survey of the Community of Minden was

performed. Sewage flows were found in the Main Street storm sewers and in the drainage ditches along Peck and Germain Streets which in turn flow into the Gull River. Samples from the Gull River however showed no deterioration in its water quality as it flowed through the community. A Provincial sewage works is being designed to serve the Community of Minden. The contamination noted in this survey would be eliminated by the construction of the proposed sewage works.

RECOMMENDATIONS:

The contaminated discharges noted in the storm drainage facilities in the Community of Minden should be eliminated.

HCMcN:bm


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H. C. McNaughton,
Technician,
Division of Sanitary Engineering.

MINDEN POLLUTION SURVEY

<u>SAMPLE POINT</u>	<u>SAMPLE LOCATION</u>	<u>DATE</u>	<u>5-DAY B.O.D.</u>	<u>TOTAL</u>	<u>SOLIDS</u>		<u>COLIFORMS PER 100 ML.</u>	
					<u>SUSPENDED</u>	<u>DISSOLVED</u>	<u>TOTAL</u>	<u>FAECAL</u>
TG 189.0	GULL RIVER AT MAIN BRIDGE	SEPT. 29/69	0.6	200	5	195	250	10
		MAY 5/70	1.0	60	5	55	55	15
		NOV. 6/70	1.0	30	5	25	4	12
TG 188.5	GULL RIVER $\frac{1}{2}$ MILE BELOW	SEPT. 29/70	1.4	210	10	200	65	8
		MAY 5/70	0.8	45	5	40	175	5
		NOV. 6/70	0.6	35	5	30	24	4
TG 1898.8	GULL RIVER AT BEAVER- BROOK GOLF COURSE BRIDGE	SEPT. 29/69	0.4	90	5	85	60	10
		MAY 5/70	1.8	75	5	70	30	10
		NOV. 6/70	1.4	20	0	20	20	4
TG 188.75D	DITCH TO GULL RIVER FROM LAUNDORMAT AREA	SEPT. 29/69	3.0	400	15	385	2000	40
		MAY 5/70	0.8	140	10	130	225	0
		NOV. 6/70	2.0	70	5	65	124	20
TG 189.15 D	DITCH TO GULL RIVER AT GERMAIN ST.	SEPT. 39/69	0.4	45	5	40	350	52
		MAY 5/70	1.4	370	10	360	11000	900
		NOV. 6/70	1.0	400	5	395	88	16
TG 189.7D	CREEK AT HIGHWAY BY-PASS	SEPT. 29/70	1.0	200	5	195	215	86
		MAY 5/70	0.6	120	5	115	75	55
		NOV. 6/70	11.0	350	25	325	12	<4
TG 188.9D	DITCH TO GULL RIVER BELOW MAIN BRIDGE	SEPT. 29/69	0.8	260	5	255	2800	1500
		MAY 5/70	5.0	550	120	430	420000	28000
		NOV. 6/70	3.0	470	25	445	5800	2200

MINDEN POLLUTION SURVEY CONT'.

<u>SAMPLE POINT</u>	<u>SAMPLE LOCATION</u>	<u>DATE</u>	<u>5-DAY B.O.D.</u>	<u>TOTAL</u>	<u>SUSPENDED</u>	<u>SOLIDS</u>	<u>COLIFORMS PER 100 ML.</u>	
						<u>DISSOLVED</u>	<u>TOTAL</u>	<u>FACIAL</u>
TG 189.3D	LOCAL CREEK AT GULL RIVER	SEPT. 29/69	0.6	55	5	50	200	60
		MAY 5/70	1.0	140	5	135	60	15
		NOV. 6/70	0.6	140	5	135	32	16
TG 189.0S1	SEWER TO GULL RIVER (WEST BANK) AT FOOT OF BOBCAYGEON ST.	SEPT. 29/69	80	900	70	830	165	6
		MAY 5/70	15	440	190	250	1000	50
		NOV. 6/70	0.8	66	6	60	472	84
TG 189.0S2	MAIN STREET STORM SEWER - SOUTH SIDE TO EAST BANK	MAY 5/70	15	440	190	250	72000	14000
		NOV. 6/70	70	470	25	445	340	96
TG 189.0S3	MAIN STREET STORM SEWER - NORTH SIDE TO EAST BANK	MAY 5/70	12	220	115	105	1500000	40000
		NOV. 6/70	40	450	55	395	270000	7900

APPENDIX I

WATER QUALITY AND EFFLUENT OBJECTIVES

The OWRC objectives for surface waters is described in a booklet entitled "Guidelines and Criteria for Water Quality Management in Ontario". A copy of the booklet is enclosed in the pocket on the back cover of this report. This publication contains the guidelines and introduces water quality criteria for various uses including public, agricultural and industrial water supply, recreation, aesthetic enjoyment and the propagation of fish and wildlife. The guidelines should be followed to determine the acceptability of a watercourse for various uses.

A few pertinent maximum limits of contaminants in sewage treatment plant and industrial effluents are listed below. Adequate protection for surface waters except in certain specific instances influenced by local conditions, should be provided if the following concentrations are not exceeded:

5-Day BOD - not greater than 15 ppm

Suspended Solids - not greater than 15 ppm

GLOSSARY OF TERMS

Coliform Organisms - The Membrane Filter Technique is used to obtain a direct count of coliform organisms. These organisms are the normal inhabitants of the intestines of man and other warm-blooded animals and soils. They are always

present in large numbers in untreated sewage and are, in general, relatively few in number in other stream pollutants. The fecal portion of the total coliforms originate only in the intestines of man and warm-blooded animals and indicate recent pollution.

Biochemical Oxygen Demand (BOD) - The biochemical oxygen demand test indicates the amount of oxygen required for stabilization of the decomposable organic matter found in sewage, sewage effluent, polluted waters, or industrial wastes. This test is carried out at a temperature of 20° C over a period of 5 days and the results are reported in parts per million (ppm).

Solids - The analyses for solids include tests for total, suspended and dissolved solids. The results are reported in parts per million (ppm). The total solids is a measure of the solids in solution and in suspension. Suspended solids indicate the measure of undissolved solids of organic or inorganic nature whereas the dissolved solids are a measure of those solids in solution. Land erosion, sewage and industrial wastes are significant sources of suspended solids.

ONTARIO

O.W.R.C. Publication

WATER POLLUTION SURVEY OF THE COMMUNITY OF MINDEN COUNTY OF HALIBURTON, 1971

TERMINAL STREAM: TRENT R.

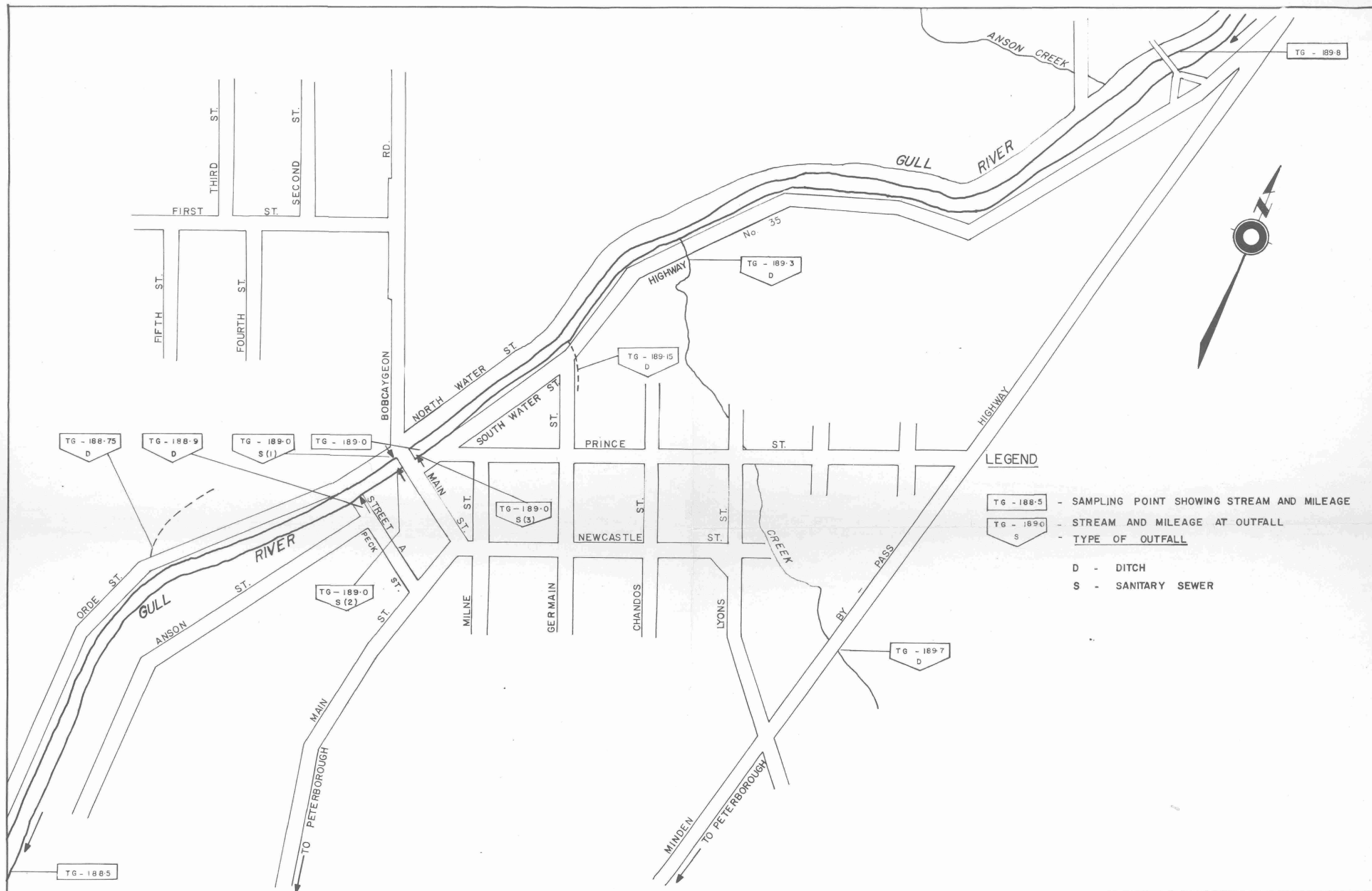
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ONTARIO WATER RESOURCES COMMISSION

COMMUNITY OF MINDEN

WATER POLLUTION SURVEY
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